

DEPARTMENT OF THE ARMY
HEADQUARTERS, FIFTH U. S. ARMY AND FORT SAM HOUSTON
FORT SAM HOUSTON, TEXAS 78234-5000

FSH REGULATION
No. 40-6

15 Oct 93

Medical Services
PREVENTION OF HEAT INJURY

1. PURPOSE: To establish policies and procedures and to assign responsibilities for the prevention and reporting of heat injuries.
2. APPLICABILITY: This regulation applies to all units assigned to or supported by USAG, FSH.
3. REFERENCES:
 - a. AR 40-5, Preventive Medicine, 15 Oct 90
 - b. AR 40-400, Patient Administration, 2 Feb 87
 - c. TB MED 507, Heat Injury Prevention, Jul 80.
 - d. FM 21-10-1, Unit Field Sanitation Team, Oct 89.
4. GENERAL:
 - a. All individuals are susceptible to the effects of heat. These effects can present a spectrum of severity ranging from nuisance to potentially life-threatening. Since most heat injuries are preventable, the judicious application of preventive measures by commanders and supervisory personnel at all levels of command will greatly reduce the incidence of heat injury. Successful prevention of heat injury depends on education; acclimatization of personnel; and, to the extent practicable, reduction of exposure to effects of heat.
 - b. The Wet Bulb/Globe Temperature (WBGT) is a reliable index of environmental stress which incorporates the effects of radiated heat, evaporative cooling, and ambient temperature. Although the WBGT index and related categories are excellent guides for planning purposes, heat injuries may occur at any temperature to individuals with certain predisposing conditions (See Annex A). Vigilance is the key to reducing the degree and number of heat injuries.

*This regulation supersedes FSH Reg 40-6, 7 March 1990

c. For personnel unaccustomed to heat, approximately two weeks of progressively more strenuous activity will result in acclimatization. Although acclimatized personnel are more resistant to the effects of heat, they can still sustain heat injuries. To reduce the likelihood of heat injury, strenuous activities should be planned for and conducted during the coolest parts of the day (early morning or late afternoon).

d. The use of salt tablets is no longer authorized. Alternatively, personnel should eat three meals per day with normal salt intake. Soldiers should be encouraged to consume copious quantities of water (1/2 to 2 quarts per hour, depending on temperature and humidity). Thirst is not a good indicator of hydration; therefore, personnel should be encouraged to drink water even when not thirsty. During hot weather operations, supervisors should enforce a work/rest cycle and water consumption to further reduce the effects of heat. Annex A contains guidance for water intake and work/rest cycle based upon the WBGT index.

e. The use of body armor or Nuclear, Biological, and Chemical protective equipment in effect adds ten degrees to the measured WBGT. Particular attention should be given to personnel wearing body armor or participating in NBC training.

f. Supervisors must be aware that an individual need not be exposed to direct sunlight or be involved in strenuous activity to become a heat casualty. Sedentary individuals in the shade may become casualties.

5. RESPONSIBILITIES:

a. The Director of Plans, Training, Mobilization, and Security (DPTMSEC), USAG, FSH, will:

- (1) Disseminate heat category information.
- (2) Make recommendations regarding modification of training due to climatic conditions.
- (3) Coordinate with Preventive Medicine Service (PVNTMED Svc), Brooke Army Medical Center (BAMC), as required.

b. The Preventive Medicine Service, Brooke Army Medical Center, will:

(1) Provide technical assistance and training as required by this regulation.

(2) Ensure the collection, recording, and maintenance of WBGT information.

(3) Transmit WBGT index and heat condition/category information to DPTMSEC.

(4) Report heat injuries by special Telegraphic Report (RCS MED-16 (R4)) IAW Chapter 6, AR 40-400 and Appendix C, AR 40-5.

(5) Coordinate with Camp Bullis Medical Clinic to ensure that a WBGT monitoring station is established at Camp Bullis.

c. Commanders will:

(1) Prevent heat injuries among members of their command.

(2) Develop and implement standing operating procedures (SOP) for the prevention of heat injury within their command.

(3) Ensure that all assigned/attached personnel are knowledgeable regarding the cause, prevention, and recognition of heat injury.

(4) Exercise adequate supervision to ensure that preventive measures are employed within the command.

(5) Exercise precautionary measures for the prevention of heat injury to susceptible individuals; e.g., recognizing factors such as conditioning, medications, underlying disease, or previous heat injury.

(6) Utilize guidance contained in this regulation and referenced publications to minimize heat casualties.

(7) Obtain and ensure distribution of GTA 8-5-45 to each supervisor in the chain of command.

6. PROCEDURES:

a. Training:

(1) Beginning in April, PVNTMED Svc will assist supervisors conducting heat injury and recognition training. Supervisors are responsible for being knowledgeable regarding prevention and recognition of heat injury.

(2) Heat injury prevention training will be conducted, by the units, between April and September of each year. Availability of training assistance from PVNTMED Svc will be published in the Fort Sam Houston Command Bulletin and in the Newsleader.

(3) Heat injury countermeasure cards (GTA 8-5-45) should be ordered sufficiently in advance of hot weather to ensure that each supervisor in the chain of command has one. This card will be used to supplement training.

(4) Units should conduct heat injury prevention and recognition training to ensure that all newly assigned personnel are aware of heat injury countermeasures.

b. Wet Bulb/Globe Temperature (WBGT) Monitoring:

(1) Preventive Medicine Service will conduct WBGT monitoring beginning 1 May and ending 30 September yearly. The monitoring period may begin sooner or end later depending upon environmental conditions.

(2) WBGT monitoring stations will be established at both Fort Sam Houston and at the Camp Bullis Medical Clinic.

(3) WBGT indices will be determined at 0900, 1100, 1300, and 1500 during normal duty days. At Camp Bullis, WBGT indices will be determined at the same intervals, seven days per week, during hot weather. Under conditions of rapidly rising temperatures, the WBGT index will be determined more frequently. Notification to DPTMSEC will not be initiated unless the WBGT index exceeds 78 degrees. The WBGT determination made at 1500 will be in effect until sundown. WBGT determinations will not be

made during periods of precipitation. Units training on FSH requiring WBGT information during non-duty days should acquire a Botsball (NSN 6665-01-103-8547). The Botsball is not accurate under certain climatic conditions (hot, dry, and windy). The Botsball should be used only as a backup at localities within the installation. Consultation with PVNTMED Svc is recommended prior to utilization of the Botsball.

(4) Heat indices and modification of physical activity will be as indicated in Annex B.

c. Dissemination:

(1) When PVNTMED Svc determines that a heat condition exists (Annex B), notification to DPTMSEC will be initiated. Notification will also be made when the WBGT index drops below 78 degrees.

(2) Camp Bullis Medical Clinic will conduct WBGT surveillance IAW para 6b(3) of this regulation and will convey the WBGT information to HQ, Camp Bullis for dissemination. Camp Bullis Medical Clinic will provide PVNTMED Svc a daily summary of WBGT for the preceding day.

(3) Range Training, Training Support Division, and DPTMSEC will telephonically provide the current WBGT index to major commands located at FSH. Units training at Camp Bullis should contact HQ, Camp Bullis for WBGT index information. Technical questions concerning heat stress will be referred to PVNTMED Svc.

(4) Notified commands will further disseminate WBGT index information, as appropriate, and take action IAW their SOP for heat injury prevention.

d. Heat Casualties: The urgency of the need to evacuate personnel known or suspected to be suffering from heat injury cannot be overstated. Once initial first aid treatment is provided, casualties will be evacuated to the nearest medical treatment facility by the most expeditious means available. Descriptions and first aid measures for heat injury are contained in Annex C.

ANNEX A

WATER INTAKE AND WORK/REST CYCLE

HEAT CATEGORY	WBGT INDEX*	WATER INTAKE**	WORK/REST++
1	78 - 81.9	At Least 1/2	Continuous
2	82 - 84.9	At Least 1/2	50/10
3	85 - 87.9	At Least 1	45/15
4	88 - 89.9	At Least 1 1/2	30/30
5	90 and up	More than 2	20/40

* MOPP gear or body armor adds at least 10°F to the WBGT Index.

** Quarts of water per hour minimum.

++ Minutes work vs minutes rest per hour. Rest means minimal physical activity, but does not exclude lectures, demonstrations, minor maintenance activities, etc.

PREDISPOSING FACTORS TO HEAT INJURY

1. Diseases or injuries, particularly fevers, vomiting/diarrhea, heat rash, or sunburn.
2. Recent use (within 24 hours) of alcohol
3. Overweight/unfit.
4. Fatigue/lack of sleep
5. Taking medication (especially for high blood pressure, colds, or diarrhea).
6. Previous heat injury.
7. Lack of recent experience in a hot environment.
8. Recent immunizations.

ANNEX B

HEAT CATEGORIES AND PHYSICAL EXERTION

CATEGORY	WBGT INDEX*	CONTROLS**
1	78 - 81.9	Use discretion in planning heavy exercise.
2	82 - 84.9	Use discretion in planning heavy exercise.
3	85 - 87.9	Suspend strenuous exercise during first three weeks of training. Training activities may be continued on a reduced scale after the second week of training. Avoid activities in the direct sun.
4	88 - 89.9	Curtail strenuous exercise for all personnel with less than 12 weeks of hot weather experience.
5	90 and up	Physical training and strenuous exercise should be suspended. Essential operational requirements where the risk of heat injury is warranted are excluded from this prohibition.

* MOPP gear or body armor adds at least 10°F to the WBGT Index.

** One should always remember that indices are only guidelines and that heat injuries may occur at temperatures considerably less than those indicated in this ANNEX.

ANNEX C

HEAT INJURY: RECOGNITION AND FIRST AID

1. Heat Cramps.

- a. Symptoms. Muscle cramps of the abdomen, arms, and/or legs
- b. First Aid. Move casualty into a shaded area and loosen clothing. Have the casualty drink copious quantities of water and evacuate to a medical treatment facility as soon as possible.

2. Heat Exhaustion.

- a. Symptoms. Profuse sweating with pale, moist, and cool skin, headache, weakness, loss of appetite, or dizziness. May also have heat cramps, nausea, urge to defecate, chills, rapid breathing, tingling of the hands or feet, and confusion.
- b. First Aid. Move casualty to a shaded area and loosen or remove clothing, elevate legs, and fan if very hot. Since dehydration is the principle problem, encourage the casualty to consume as much water as possible. Evacuate the casualty to a medical treatment facility as soon as possible.

3. Heatstroke.

- a. Symptoms. Headache, dizziness, stomach pains, mental confusion (altered mental state), weakness, may suddenly lose consciousness, and may have seizures. Skin is hot and may be dry; pulse and respiration are rapid and weak. The body temperature is very high (104° - 106°F or more). It is this excessive temperature which kills the casualty of heatstroke.

HEATSTROKE IS A MEDICAL EMERGENCY. EVACUATION TO A HOSPITAL SHOULD BE IMMEDIATE. THE STEPS DESCRIBED BELOW TO REDUCE BODY TEMPERATURE SHOULD BE STARTED IMMEDIATELY AND CONTINUED DURING EVACUATION UNTIL THE BODY TEMPERATURE HAS BEEN REDUCED TO NEAR NORMAL LEVEL.

- b. First Aid. Pour water over casualty and fan. Move casualty to a shaded area, remove clothing and boots, elevate legs, continue pouring on water and fanning, and massage the skin. Contact the nearest medical facility immediately and arrange evacuation by the most expeditious means.

The proponent of this regulation is the Preventive Medicine Service, Brooke Army Medical Center. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) to the Commander, U.S. Army Garrison, ATTN: HSHD-DH, Fort Sam Houston, TX 78234-5000.

FOR THE COMMANDER:



OFFICIAL:
GEORGE A. FINLEY
Director of Information
Management

MICHAEL F. MERRILL
Deputy Director of Information
Management

DISTRIBUTION:

A
B
C